

REVIEWS

Native Orchids of Trinidad and Tobago. By RICHARD EVANS SCHULTES. 275 pp., 25 photographs, 74 drawings, 1 map. Pergamon Press, 1960. \$15.

Until recently the determination of orchids has often proved a difficult task. The literature pertaining to the 20,000 or so species is naturally voluminous, much of it is widely scattered and difficult of access, and in consequence most identifications have to be carried out by specialists at such large orchid herbaria and libraries as those at Harvard University. Within the last decade, however, a number of floristic treatments of the Orchidaceae have appeared, including those for the United States, Mexico, Guatemala, Venezuela, Brazil, Peru, and Malaya; now the general botanist and amateur student are much better equipped to work with this fascinating family.

Dr. Schultes, Curator of the Botanical Museum of Harvard University, has prepared an excellent account of the orchids of Trinidad and its companion island, Tobago. The subject of this meticulously written and well-illustrated treatise is restricted to an area of less than 2,000 square miles, but the book will be of more than local interest because a large number of the species are found elsewhere in Latin America. Trinidad and Tobago are not true islands in the geologic sense, being non-volcanic in origin. Trinidad is only seven miles from the coast of Venezuela and endemism is low—7 per cent; as is well-known, on islands never connected with the mainland endemism is often very high (e.g., 75 per cent in Hawaii). The flora of Trinidad is also distinctly South American, rather than Caribbean, and this applies as well to the orchids.

Schultes recognizes 181 species of Orchidaceae, two less than are found in the Gramineae, the largest family on the islands. Included in each generic description are characters found in the entire geographic range, whereas the species descriptions apply only to plants from the two islands. Descriptions and citations of specimens are very complete, and there are also presented such useful data as the flowering times, the etymological origin of the generic names, and the citation of notes published elsewhere.

Most of the photographs are undistinguished, but are adequate for purposes of identification. Unfortunately, the one of *Pleurothallis diffusa* appears again on another page mislabeled *Stelis muscifera*. Quite outstanding are the drawings, many of which are reprinted from other recent floristic works on orchids. By such well-known artists as Gordon Dillon and G. Dunsterville, they add much to the value of the book.

This work can be especially recommended as an introduction to a representative selection of orchid taxa, many of which are widespread in the Americas.—MYRON KIMNACH, Botanical Garden, University of California, Berkeley.

Aquatic Plants of the Pacific Northwest with Vegetative Keys. By (late) ALBERT N. STEWARD, LA REA DENNIS, and HELEN M. GILKEY. Illustrated. Oregon State College Studies in Botany, No. 11. Oregon State College Press, Corvallis. v + 184 pp. 1960. \$2.50.

This manual was intended to cover "all true aquatics and also species whose life cycle includes some stage that requires either the saturation of the substrate with water or the presence of an ambient aqueous medium" occurring in Oregon, Washington, British Columbia, and Alaska. The authors have not succeeded in doing this, but they have produced a manual with some merits which will be useful once its limitations are recognized.

The text covers hepatics, mosses, vascular cryptogams, and angiosperms. Species found both in moist and dry areas were to be excluded. Main emphasis in the keys is on vegetative characters, although reproductive structures are used either secondarily, or when vegetative traits fail. Because of the generous ecological qualifications given above, one cannot argue with the inclusion of *Alnus oregona*, *Urtica lyallii*, *Physocarpus capitatus*, *Oenothera hookeri*, or *Gaultheria shallon* in this manual,